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(71) Applicant: **SONY CORPORATION**  
**7-35, Kitashinagawa 6-chome Shinagawa-ku**  
**Tokyo(JP)**

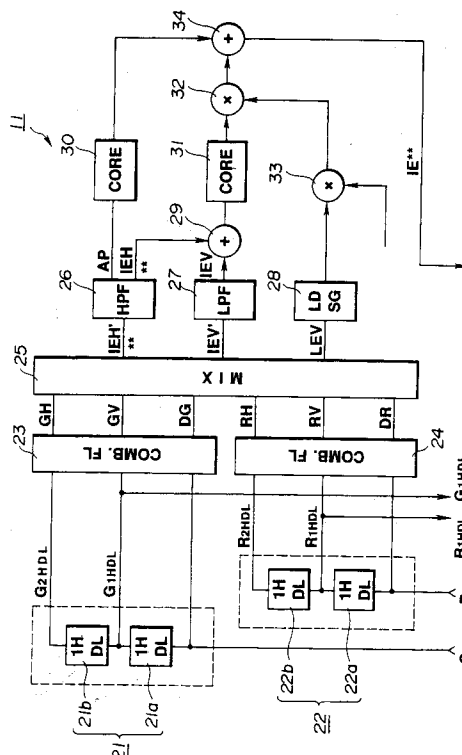
(72) Inventor: **Asaida, Takashi**  
**c/o Sony Corporation, 7-35, Kitashinagawa**  
**6-chome**  
**Shinagawa-ku, Tokyo(JP)**

(74) Representative: **TER MEER - MÜLLER -**  
**STEINMEISTER & PARTNER**  
**Mauerkircherstrasse 45**  
**W-8000 München 80(DE)**

(54) **Signal processing circuit for solid-state imaging apparatus.**

(57) A signal processing circuit for a solid-state imaging apparatus in which an imaging output signal from each solid-state image sensor of an imaging section making use of spatial offsetting is digitized to form a detail signal for image enhancement by digital signal processing. A first delay circuit (21) having at least one delay unit with a delay time approximately equal to one horizontal scanning period provides the above mentioned delay time to a green color imaging signal of the digital output signal obtained by digitizing image output signals read from the solid-state image sensors. The signal synthesis is then performed in a first synthesis circuit (23) to limit the band of the green color imaging signal in the perpendicular imaging signal. A second delay circuit (22) having at least one digital delay unit having a delay time about equal to one horizontal scanning period provides the above mentioned delay time to one of the red or blue color imaging signals or combined red and blue color imaging signals of the above mentioned digital output signal. Signal synthesis is then performed by a second synthesis unit (24) to limit the band of the red or blue color imaging signal or the combined red and blue color imaging signals in the perpendicular direction. Equal amounts of the first and second synthesis signals are summed together in a summation unit (25) so as to be outputted as the horizontal

detail signal via digital filter unit.

**FIG.12**



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## EUROPEAN SEARCH REPORT

Application Number

EP 90 11 9070

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                     |                                                                                                                                     |                                                                                                                                                                                                                                                                                       |                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Category                                                                                                                                                                                                                | Citation of document with indication, where appropriate, of relevant passages                                                       | Relevant to claim                                                                                                                                                                                                                                                                     | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
| P, A                                                                                                                                                                                                                    | EP-A-0 368 354 (SONY CORPORATION)<br>* column 5, line 48 - column 9, line 4 *<br>* column 11, line 52 - column 13, line 18 *<br>--- | 1-3, 8                                                                                                                                                                                                                                                                                | H04N9/04                                      |
| A                                                                                                                                                                                                                       | EP-A-0 068 811 (SONY CORPORATION)<br>* page 3, line 20 - page 6, line 12 *<br>* page 9, line 15 - page 11, line 31 *<br>-----       | 1, 8                                                                                                                                                                                                                                                                                  |                                               |
|                                                                                                                                                                                                                         |                                                                                                                                     |                                                                                                                                                                                                                                                                                       | TECHNICAL FIELDS SEARCHED (Int. Cl.5)         |
|                                                                                                                                                                                                                         |                                                                                                                                     |                                                                                                                                                                                                                                                                                       | H04N                                          |
| The present search report has been drawn up for all claims                                                                                                                                                              |                                                                                                                                     |                                                                                                                                                                                                                                                                                       |                                               |
| Place of search<br>THE HAGUE                                                                                                                                                                                            |                                                                                                                                     | Date of completion of the search<br>26 JUNE 1992                                                                                                                                                                                                                                      | Examiner<br>DE DIEULEVEULT A. J.              |
| <b>CATEGORY OF CITED DOCUMENTS</b>                                                                                                                                                                                      |                                                                                                                                     |                                                                                                                                                                                                                                                                                       |                                               |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                                     | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |                                               |